IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#18
LD
2-11-03

In re application of

Lubda et al.

Serial No.:   09/446,298
Filed   06/12/2000
For: HOLDING DEVICE FOR MONOLITHIC SORBENTS

Group Art Unit: 1771
Examiner: Roché, L.

DECLARATION

Honorable Commissioner of
Patents and Trademarks
Washington, D.C., 20231

SIR:

The Declarant, Dieter LUBDA, being duly warned, declares and says:

THAT he is a German citizen, residing at Bensheim, Germany;

THAT he is a Diploma engineer having studied at the Technische Fachhochschule Berlin (West), Germany, from 1980 to 1984;

THAT he graduated from the Technische Fachhochschule Berlin (West), Germany, in 1984

THAT in 1984, he joined the Research and Development Department, Section Chromatography, of MERCK, Darmstadt, Germany;

THAT since 1984, he has been working in the field of separation materials and chromatography;

THAT he is author or co-author of numerous articles in the field of separation materials and chromatography, especially monolithic sorbents made of silica gel;

THAT he is familiar with the subject matter of the invention disclosed and claimed in U.S. Patent Application Ser. No. 09/446,298, by Lubda et al., of which he is a co-inventor (hereinafter referred to as APPLICATION);

THAT he is familiar with the subject matter disclosed in the cited references, among which are WO 94/19687 and US 4,556,538;

THAT the monolithic sorbents of WO 94/19687 are not pressure stable to the extent necessary for reasonable flow rates (typically more than 50 bar), if they are only encased by teflon: only by tightly housing the monolithic sorbents of WO 94/19687 wrapped into teflon into the steel construction of Fig. 1 the necessary pressure stability can be achieved;

THAT experiments testing the pressure stability of the monolithic sorbents of WO 94/19687 wrapped into Teflon without the supporting steel construction showed that these sorbents lost their pressure resisting feature and became leaky at pressures of 25 bar; furthermore they bursted at pressures of 36 bar (see enclosed photographs);

THAT in contrast to these findings the encased monolithic sorbents of the present invention are pressure resistant at 100 bar or even higher;

THAT the encased monolithic sorbents of the present invention are pressure resistant up to at least 200 bar, if polyether ether ketones are used as plastic;

THAT the present invention simplifies the construction of encased monolithic sorbents drastically by rendering unnecessary the supporting steel construction used in WO 94/19687;

THAT the sorbent used in the columns disclosed in US 4,556,538 are spherical particles of 1 to 8 μm size; because of the mobility of the sorbent particles of particulate sorbent beds the sorbent bed is always in tight contact to the walls of the column;

THAT this mobility is absent in ceramic sorbents as used in the present invention, thus rendering the pressure resistance of the casing becomes highly critical:

THAT the pressure stability of the encased monolithic sorbents of the present invention could not be expected by the person skilled in the art based on the disclosure of WO 94/19687 and of the encased monolithic sorbents of the present invention US 4,556,538.

The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the APPLICATION or any patent issuing thereon.

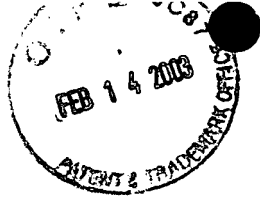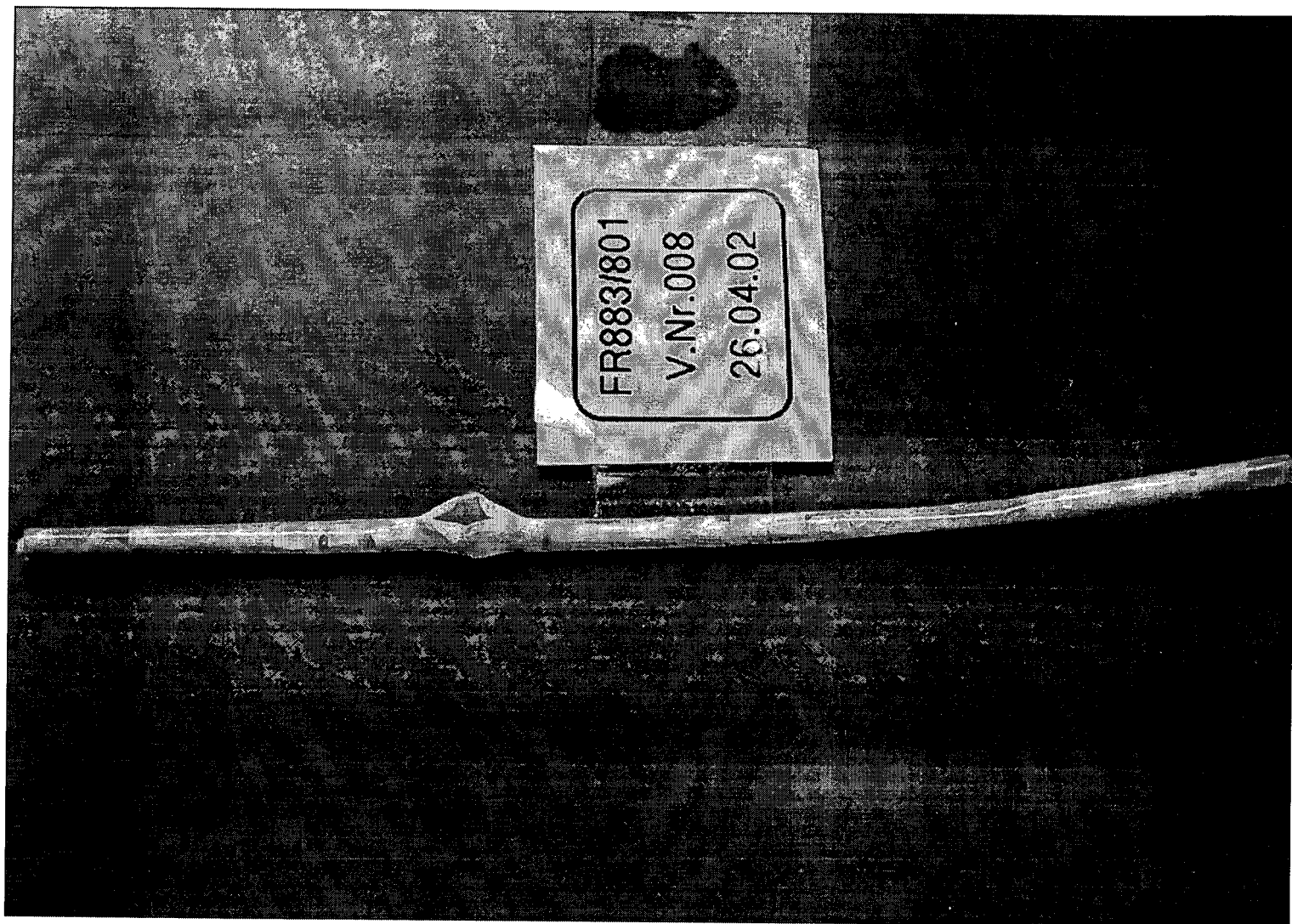Done, this February 13, 2003 at Darmstadt, Germany

Dieter Lubda

EXPERIMENT 1

EXPERIMENT 2

FR883/801
V.Nr.008
26.04.02

EXPERIMENT 3